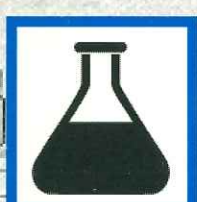
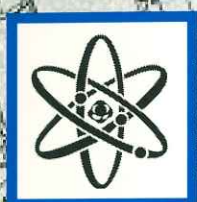




1. A computer keyboard comprising:
a keyboard housing;
a key mechanism coupled to keyboard logic for capturing key-
information;

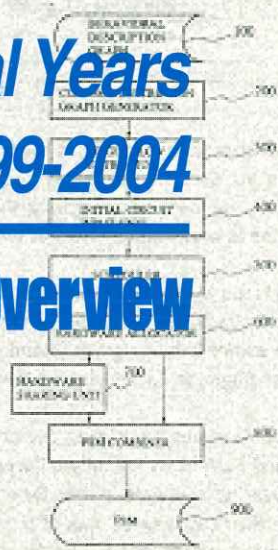


PTO
Strategic
Information
Technology
Plan

Fiscal Year 1993-1994

Fiscal Years
1999-2004

Executive Overview



Message From The Chief Information Officer

In PTO's Corporate Plan, the Commissioner of Patents and Trademarks outlines a vision and establishes goals which recognizes the importance of intellectual property protection in a global and technology-based economy. In concert with the Corporate Plan, the Strategic Information Technology Plan documents the role that information technology plays in achieving the PTO's mission, vision, and goals. The plan also defines a vision for PTO's information technology environment that will greatly enhance the quality of the PTO's service to its customers and guide the PTO Information Technology Program during the FY1999 to FY2004 period.

To meet the challenges of the future, the PTO has developed an ambitious strategic agenda to help position the agency to operate more successfully and efficiently in the 21st century. An important component of the PTO's agenda is "leveraging information technology." This corporate strategic response enables PTO to maintain current business production, improve and enhance the current business through electronic commerce, and add new capability by migrating automated information systems to operate on an "open system" information technology infrastructure.

The PTO has adopted a systematic and incremental approach to implement new automated information systems that will ultimately support reengineered patent and trademark processes, resolve century date processing problems, implement electronic commerce, and dramatically improve customer satisfaction and operating efficiency. This approach also embodies the principles of the Government Performance and Results Act (GPRA) and the Clinger-Cohen Act. This plan describes the management approach and information technology initiatives that are critically important to achieving the vision, mission, goals, and objectives for the--

- Patents Business Area
- Trademarks Business Area
- Information Dissemination Business Area
- Policy Function
- Corporate Support Function
 - ⇒ Resource Management
 - ⇒ Information Technology Infrastructure

All PTO organizational units should ensure that current and planned information technology initiatives are in conformance with this plan. This plan will be used as the primary basis for justifying and prioritizing future budget requests involving information technology resources.



Dennis R. Shaw

December 18, 1998

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Introduction

The Patent and Trademark Office's (PTO) mission is to administer the laws relating to patents and trademarks, promote industrial and technical progress in the United States, and strengthen the national economy. As an integral part of this mission, the PTO provides inventors and entrepreneurs with the protection and encouragement they need to take their inventive and creative ideas to the market place. This support ultimately enables job creation, economic growth, sustainable development, and improved living standards for all Americans.

The PTO's overall corporate vision is to lead the world in providing customer-valued intellectual property rights that spark innovation, create consumer confidence, and promote creativity. Recognizing the increasing importance of intellectual property protection in a global and technology-based economy, the PTO established two strategic goals designed to focus agency priorities in accomplishing this vision:

- Play a leadership role in intellectual property rights policy, including trade-related intellectual property issues for which we have responsibility.
- Provide our customers with the highest level of quality and service in all aspects of the PTO operations.

To meet the challenges of the future, the PTO has developed an ambitious strategic agenda to help position the agency to operate more successfully and efficiently in the 21st century. An important component of the PTO's agenda is "leveraging information technology." This corporate strategic response enables the PTO to maintain current business production, improve and enhance the current business through electronic commerce, and add new capability by migrating automated information systems to operate on an "open system" information technology infrastructure. This results in reductions in patent and trademark cycle times, elimination of paper-based processing, and evolution of the businesses to electronic commerce and an electronic workplace.

An important component of the PTO's strategic agenda is "leveraging information technology" to more effectively support the business environment.

Managers and employees need to understand how information technology supports the PTO's corporate strategy as well as help the business areas achieve their vision, mission, goals, and objectives. To this end, the Chief Information Officer annually prepares and issues this Strategic Information Technology Plan as an Appendix to the PTO's Corporate Plan.



The Strategic Information Technology Plan provides important information on the PTO's strategic vision for implementing an electronic workplace as well as its associated management strategies, planning assumptions and constraints, decision making process, and priorities. In addition to the strategies that the PTO applies to all information technology efforts, the Strategic Information Technology Plan provides the high-level operational plan for critically important information technology projects currently underway or planned during the FY 1999-2004 period. Each information technology project provides information describing the business function to be supported, the reason why the business needs the results from the project, and what is to be done. Each project narrative also describes the business commitment to be supported or achieved, expected benefits to be realized, performance measures to be used to track the success of the results, and the status of the project in terms of business-oriented milestones.

PTO's Strategic Vision for Leveraging Information Technology

Whether employees are examining a patent or trademark application, assessing fees, answering customer questions, or providing assistance in the public search facilities, the quality, accuracy, and efficiency of their effort often depends on their ability to access information in a timely manner and in a useful format. The PTO also serves everyone who has a vested interest in the protection of intellectual property rights both in the United States and abroad. These customers – domestic and foreign businesses, individual inventors, our international partners, and the public – need quality services that deliver products in a timely manner and in a useful format. With this in mind, the PTO is

focusing on a strategic direction to develop an information technology environment for itself, its international partners, and the public, where patent and trademark information is created once, managed effectively, used often, and evolved over time to electronic commerce whereby most internal and external transactions are performed electronically and are accessible through the Global Information Infrastructure.

...patent and trademark information is created once, managed effectively, used often, and evolved over time to electronic commerce whereby most internal and external transactions are performed electronically and are accessible through the Global Information Infrastructure.



Management Strategies for Leveraging Information Technology

Organizational Responsibilities

The PTO's information technology management framework provides for the evolutionary application of new technology to maintain current production capability and to help achieve the PTO's strategic vision. This framework fosters the standardization of hardware, software, and data to the maximum extent possible while ensuring responsive support.

The successful development, deployment, and operation of information technology requires close coordination and partnership between the business area Program Sponsor and the Chief Information Officer. Teamwork is essential to delivering a quality system on time and within budget. Each business area Program Sponsor identifies and prioritizes "what needs to be done" in terms of business functions and performance goals. The Chief Information Officer identifies how information technology can be applied to help the business area achieve results while maintaining efficient and effective information technology operations throughout the PTO. In collaboration, the business area sponsor and the Chief Information Officer work closely to determine project cost and schedule, provide resources, and prioritize information technology projects.

Successful information technology projects require close coordination and partnership between the business areas and the Chief Information Officer.

The PTO Technology Council provides a top-level management forum to address information technology issues and decides or makes recommendations to the Commissioner regarding information technology initiatives for approval, as appropriate. The Technology Council also reviews and recommends approval of the PTO Strategic Information Technology Plan. The Technology Council performs the functions of an Information Technology Investment Board, as recommended by OMB in its implementing guidance for the Information Technology Management Reform Act of 1996 (Clinger-Cohen Act).

Although information technology projects are extremely important, there are other activities associated with the efficient and effective application of information technology throughout the PTO. The PTO centralizes information technology planning, technical direction, oversight, policy formulation, system development and acquisition, and day-to-day operational management of the PTO information technology infrastructure under the Chief Information Officer.



The dissemination of associated information technology products and services to the public, as well as public access to the PTO's in-house search data base systems, is under the direction of the Associate Commissioner and Chief Financial Officer. The Assistant Commissioner for Patents, through the Scientific and Technical Information Center, also provides the public with access to more than 100,000 volumes of scientific and technical books as well as copies of foreign patents for a fee.

Governing Strategies

To enhance the effectiveness of information technology management, the Chief Information Officer has developed several key governing strategies. These strategies represent the fundamental principles and philosophies which the PTO follows in managing its information technology resources and meeting business area information needs. The PTO manages the information technology infrastructure separate from the application software and the data, recognizing that each component has a distinct life cycle. The PTO integrates the management of these components in the planning process.

PTO manages the information technology infrastructure separate from the application software and the data, recognizing that each component has a distinct life cycle.

Project Management Strategies

This element addresses the overall management, control, and resource allocation strategies for information technology projects.

- Manage information technology projects as investments — Projects will focus on identifying and producing measurable business improvements, and will apply risk management principles to mitigate risks.
- Emphasize evolutionary development and incremental delivery of system products and services — Projects will follow the PTO's current Life Cycle Management policy and Technical Standards guidance for systems development and maintenance activities.
- Provide information technology products and services in a timely manner and in a useful format — Projects will apply common sense to tailor the PTO's current Life Cycle Management methodology in keeping with the size and complexity of the project.

Emphasize evolutionary development and incremental delivery of system products and services.



- Encourage end-user involvement — Automated Information System (AIS)¹ projects will apply matrix management principles to adequately staff the project team with a mix of business area and highly skilled information technology personnel.
- Plan cost and schedule performance — Each project will be baselined in the PTO project management control system to ensure adequate visibility into actual progress and accurate tracking of project costs.

Information Technology Infrastructure Strategies

This element addresses key strategies pertaining to ongoing operations, modifications, augmentation, replacement, and maintenance of computer and communications equipment, network facilities, and system and data base software.

- Implement robust architecture — The PTO will transition its information technology infrastructure to a standards-based open system environment.
- The PTO will continue to migrate to a distributed client/server architecture.
- Ensure compatibility with TRM — Each project will adhere to current and planned PTO information technology standards contained in the Technical Reference Model (TRM)².
- The PTO will automate system and network management operations.
- Implement a comprehensive end user computing support environment — The PTO will provide a responsive Help Desk, highly capable desktop workstations, remote diagnosis and repair of software problems, quick resolution of hardware problems, and reliable network service.
- Implement appropriate infrastructure security mechanisms — The PTO will

Ensure compatibility with the PTO's Technical Reference Model.

¹ An Automated Information System (AIS) is a combination of functional users, information technology personnel, business processes and procedures, application software, system software, documentation, Commercial Off-the-Shelf software, computer, networking and other information technology resources that collect, record, process, store, communicate, retrieve, display, and disseminate information.

² The PTO Technical Reference Model (TRM) defines a comprehensive set of information technology standards, services, interfaces, supporting data formats, and protocols. The TRM, populated with standards and standards-based commercial products, will serve as the focus to direct the acquisition, development and maintenance of the PTO's automated information systems within the bounds of PTO-designated standard products.



provide infrastructure security services with respect to external and internal access, disaster recovery, and incident responses.

Application Software Strategies

This element addresses the key strategies pertaining to the analysis, design, development, deployment, operation, maintenance or enhancement of application software.

- The PTO is committed to improving its business processes. Therefore, business process re-engineering will precede application software design and development whenever practicable.
- A tailorable PTO system development methodology, software management processes, and standard system development tools will be used on all AIS projects. The PTO will focus on improving its software processes to ensure high quality information technology products and services are delivered in a timely manner and in a useful format.
- Prototyping is encouraged to help define and refine functional requirements.
- Software re-use, sensitive information security, and use of Commercial-Off-the-Shelf software will be emphasized on all PTO AIS projects.

Tailor approach to ensure high quality, and useful and timely delivery.

Data Management Strategies

This element addresses the key strategies pertaining to the standardization, control, and integrity of data being stored or manipulated.

- The PTO will standardize and register data models, data elements, and SGML tags in a data repository system which will facilitate data sharing, data re-use, and interoperability among AISs.
- The PTO will foster increased data sharing with its international partners by pursuing electronic data interchange agreements with foreign and international intellectual property patent organizations.
- The PTO will establish and maintain a data warehouse to provide strategic and tactical information to support analyses and decision making.

These governing strategies guide the PTO's information technology initiatives and greatly assist in enhancing the quality of information technology support provided to the PTO's business areas and customers.



Key Assumptions and Constraints

The information technology planning decisions are influenced by the PTO's strategic vision and goals, as well as by various business, political, social, demographic, and technology assumptions and constraints. Several key assumptions and constraints are—

PTO BUSINESSES

- Business area program sponsors will increase their requests for development of new AISs and changes to existing AISs due to challenges such as continuing growth in Patent and Trademark applications, increasingly complex applications, and changes in industry workloads. In FY 1999 and beyond, these requests will support the following key commitments:

Business areas will increase their requests for development of new systems and changes to existing systems.

- ◆ Patent Business Area — 12 month cycle time for all inventions in FY 2003
- ◆ Patent Business Area — Achieve full electronic filing and processing of patent applications in FY 2003
- ◆ Patent Business Area — Automate the PCT organization for receipt and processing of electronic applications during FY 2000
- ◆ Trademark Business Area — Pendency at 3.0 months to first action and 13 months to registration/abandonment
- ◆ Trademark Business Area — Achieve full electronic filing and processing of trademark applications in FY 2003
- ◆ Trademark Business Area — Enhance electronic processing while creating a balance between work and home life for employees. Pending favorable evaluation, expand work-at-home pilot to 25 percent of the Trademark attorneys up to 60 percent of time.
- ◆ Information Dissemination Business Area — Develop high-quality information products and services which deliver information when, where and in the format desired by PTO customers.



- The public will increase their demand for access to patent and trademark data, products, and services.
- The evolution of the industry to pursuing greater global intellectual property rights will continue.

INTERNATIONAL COOPERATION

- A significant number of domestic customers also are customers of intellectual property organizations in other countries, and an equally significant number of our customers do not reside in the United States.
- The PTO will continue cooperation with its international partners on information technology initiatives to include data exchange, common search strategies, and cost sharing arrangements.

ECONOMIC

- In a full-employment economy (the unemployment rate is estimated to be 5.2 percent in 2000), it will be a challenge to recruit and retain high caliber employees who can best meet our customers' needs.
- The PTO's income depends upon user fees and Congressional allocation of patent surcharge fees. Changes in these two areas have previously caused the PTO's revenue stream to fluctuate within and between fiscal years, which correspondingly affected information technology initiative commitments.
- The ability to satisfy user demands will continue to be restricted by the availability of resources (personnel and funds).
- The funds available for acquiring information technology resources will be less than the demand for resources during the planning period.

PTO employees will continue to find more and more uses for computers.

TECHNOLOGY

- Required information technology personnel skills, knowledge, and abilities increase as the transition to more complex, on-line, interactive, client server systems continues.



- New technology will continue to evolve and enable users to have faster access to more timely data, which will trigger demands for new uses of information technology to help manage programs and provide new services.
- The present trend toward greater reliance upon network communications to access both internal and external databases through PTOnet will continue.
- The PTO space consolidation project is well underway. The PTO will take advantage of the consolidation effort as much as practical to provide for a long-lasting information technology infrastructure and upgrade current capabilities at the same time. Changes in the space consolidation project, however, will only slightly affect information technology space-related initiatives since the current space will contain an aging information technology infrastructure which will require replacement and upgrade efforts at the time of relocation.

Of significant impact to PTO's information technology goals is the inability to recruit and maintain a qualified information technology staff. PTO averaged approximately 30 vacancies in fiscal year 1998 for its in-house technical staff, and an even greater number for its system development and system engineering support contractors. This includes the loss of key, senior level information technology managers who left PTO for better opportunities in other Federal agencies.

Without adequate funding and a sufficient highly skilled information technology staff, the PTO's long-range plans for improving its business processes will not be realized.

While this staffing situation affects many projects, the most notable impact has been on the Office Action Creation Subsystem (OACS). It will also impact the Tools for Electronic Application Management (TEAM) System. The TEAM project lost 3 out of 4 contract experts who were knowledgeable about prerequisite projects that were building blocks to the TEAM system. The OACS project is currently experiencing its third development team. The difficulties with contractor staffing have caused major delays to the OACS deployment. Both of these projects are critical to the deployment of the electronic workplace in the Patents Business area, and the achievement of PTO's goal of 12 month cycle time by FY 2003. Additionally, the loss of the system development managers for the Electronic Filing System (EFS), Patent Image Capture System (PICS), and the Application Capture and Review System (ACRS) projects, and the Director of the Patent Reengineering Systems Division has resulted in delays to the achievement of the Electronic Patent Application Processing milestones.

The tight job market for computer professionals in the Washington area makes continuation of these staffing problems likely. Without a highly skilled information technology staff PTO will be unable to maintain current business production while also realizing its strategic plans for improving business processes. PTO plans to vigorously



pursue recruiting employees by using job fairs, advertisements, and offering recruiting bonuses.

These assumptions and constraints impose conflicting demands on the PTO's information technology initiatives. While increased demand for more and better automation support is expected to continue, the pressure to reduce information technology expenditures and constrain growth in the number of in-house information technology personnel will also continue throughout the planning period.

Current Information Technology Environment

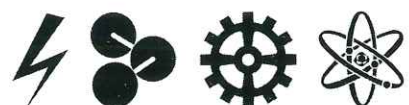
The current PTO information technology environment represents the baseline from which future improvements will evolve. This environment supports the following five components:

- Patent Business Area
- Trademark Business Area
- Information Dissemination Business Area
- Policy Function
- Corporate Support Function
- ◆ Resource Management
- ◆ Information Technology Infrastructure

Patent Business Area

Today, from a desktop computer, patent examiners can search commercial databases as well as the full text of over 2.3 million US patents issued since January 1971, English translations of 4.6 million Japanese patent abstracts, English translations of 2.8 million European patent abstracts, and 8.7 million foreign patent abstracts from the Derwent collection of patent documents. This text information increases weekly as newly granted patents are added to the database. The PTO continues to incrementally enhance examiners text search capabilities and evolve the supporting infrastructure hardware and software. In 1998, examiners

Examiners have desktop text and image search capabilities as well as specialized tools and support.



conducted 308,904 text search transactions per month (on average), an increase of 26 percent from the previous fiscal year average.

Patent examiners can also electronically search from their desktop computer 253,074 articles contained in 232 scientific and technical journals published by Elsevier. These articles provide in-depth coverage of chemistry, biotechnology, and medicine.

Patent examiners can search millions of pages of US and foreign patent images (over 20 million patents) from their desktop. This image data base grows weekly as newly granted patents are added to the database. With the deployment of this desktop capability, patent image search system use increased 48 percent in the first 6 months. The "Patent 1998 Customer Satisfaction Survey Report" indicated that PTO's customers showed an 11% increase in satisfaction with the statement that examiners "conduct a thorough search during the patent examination process," up from their opinion in 1996."

Biotechnology patent examiners can use a special automated system to search tens of thousands of nucleic and amino acid sequences. This information increases monthly as new gene sequences are added. Classifiers use an automated system from their desktop to assist with the reclassification of patent classifications of the various areas of technology.

Examiners also use desktop office automation and an Examination Toolkit as part of their day-to-day business. The toolkit provides templates for writing actions, electronic forms, electronic patent classification and procedures manuals, and other necessary tools.

In addition to supporting examiner day-to-day operational activities, the PTO has begun building the Patent Business area electronic workplace. Today, through the Patent Image Capture System, all incoming applications are scanned, converted to electronic images, and stored for electronic access by examiners and technical support staff in pre-examination, certification and licensing and review. Through the Application Capture and Review System, the Patent Business is now using commercially available optical character recognition (OCR) technology to capture bibliographic data from the scanned image of applications that are submitted to the PTO in a standardized format. This process is used to prepare and send an electronic acknowledgment of application receipt to the applicant via the Internet and to automate the capture of bibliographic data. The bibliographic data is automatically loaded into PALM, thereby reducing the need for manual data entry.

*The Patent Business Area
has begun electronic
workplace initiatives.*

The Patent Business is critically dependent on the Patent Application Location Moni-



toring (PALM) system to support day-to-day operations. PALM performs workflow tracking and status reporting for patent application processing and allows PTO employees to track the status and location of all cases and monitor internal production activity. PALM processed about 46.0 million transactions in FY1998 (an average of 3.83 million transactions each month). From their desktop, examiners have begun using the intranet web browser to access PALM to obtain status and docket information on patent applications. Patent examiners submit about 500,000 PALM intranet queries per month.

Trademark Business Area

Today, from a desktop computer, Trademark attorneys rely exclusively on electronic searching to support the processing of trademark applications. Attorneys can search the bibliographic text and prosecution history for more than 2.4 million trademarks, as well as conduct a search of all trademark images. In 1998, PTO trademark attorneys conducted 150,864 text search transactions per month (on average), an increase of 15 percent from the previous fiscal year. During FY 1998, the Trademark Business deployed a new search system that resolves performance and concurrent use restrictions and provides for additional search functions such as range searching and additional search fields.

The Trademark Business Area relies exclusively on information technology.

Trademark attorneys use desktop office automation and a Trademark Toolkit as part of their day-to-day business. The toolkit supports the retrieval of records describing patent and trademark assignments and the Trademark Trial and Appeal Board proceedings. Attorneys also can search many of the manuals that provide business guidance.

The Trademarks Business is critically dependent on the Trademark Reporting and Monitoring (TRAM) system to support day-to-day operations. TRAM contains bibliographic and prosecution history information for more than two million applications and registrations, performs workflow tracking, photocomposes the Trademark Official Gazette, and produces management reports. TRAM is an integral component of workflow procedures relating to the prosecution of applications and the maintenance of registrations and allows PTO employees to track the status and location of all cases and monitor internal production activity. TRAM processed about 17 million transactions in FY1998 (an average of 1.42 million transactions each month). From their desktop, Trademark attorneys access TRAM to obtain status on trademark applications.

The Trademarks Business is moving towards the eventual replacement of a paper-based process by implementing electronic systems and testing new technologies.



The initial application data entry system has been replaced with TRADEUPS, a desktop computer based system that permits electronic coding (markup) of free form text into individual data elements with edits to improve the quality of data in trademark databases.

The Trademarks Business is piloting the offering of electronic filing capabilities through the Internet to its customers. In FY 1998, the Trademarks Business received 235 applications from the limited number of customers participating in the electronic filing pilot. A copy of the trademark application filing form, PrinTEAS, is now available on the PTO Web site. Applicants may complete and validate the form on their desktop computer and submit it to the PTO by mail. The form offers additional instructions through the use of a "wizard" and provides edits to ensure complete information. The Trademark renewal form is also available in the PrinTEAS format.

Information Dissemination Business Area

The Information Dissemination Business promotes awareness of, and provides effective access to, patent and trademark information by providing a wide variety of information products and services, to customers throughout the world. The PTO's network of 83 Patent and Trademark Depository Libraries (PTDLs)

The Information Dissemination Business Area provides information products and services to customers throughout the world.

serves customers in major metropolitan areas and regional locations. On-line access to patent full text is available at 31 PTDLs. Partnership PTDLs in Detroit, Michigan, Sunnyvale, California and Houston, Texas offer expanded electronic access, patent image searching, and video conferencing services.

The PTO public search facilities in Arlington, Virginia provide on-site access to patent and trademark automated systems to customers who conduct 42,000 searches each month. The PTO's Web site serves thousands of customers each day, averaging 25,000 daily page accesses to the Home Page, 97,000 daily page accesses to a database containing more than 20 years of searchable patent bibliographic data, and 3,700 daily page accesses to a database of AIDS-related patents. In August 1998, the PTO began offering the public access via the Internet to a searchable Trademark database that contains the full text of all registered trademarks and pending trademark applications.

The PTO provides patent and trademark data on magnetic tape to information vendors for resale to thousands of their own customers. The PTO distributes over 24,000 tapes each year, not including patent backfile orders. The PTO also produces 270 CD-ROM masters each year covering 5 patent text products, 1 patent image product, and 4 trademark text products, and distributes over 70,000 CD-ROM



copies per year. An additional 50,000 CD-ROM copies are also distributed each year to Federal Depository Libraries directly from the GPO.

In addition to recording 346,400 intellectual property ownership transfers and other transactions (e.g., mergers, liens, and licenses) each year, the PTO sells 215,500 certified copies of patent and trademark documents and nearly 428,500 patent and trademark documents to the public each year. The PTO also provides general patent and trademark information to the public. Advances in telephony and information technology have allowed the PTO to increase the number of general information customers served via telephone, mail, and walk-in service, from 798,378 in FY 1997 to 825,958 in FY 1998.

Technology advances enabled the Information Dissemination Business to serve 27,580 more telephone customers than in FY 1997 without increasing staffing.

Policy Function

The Policy function advises, assists, promotes, and provides expertise in the area of intellectual property rights – patents, trademarks, and copyrights. The Policy function provides leadership and direction to the PTO's core business processes and corporate support processes. The function also promotes and provides expertise in the area of intellectual property rights.

The Commissioner and Deputy Commissioner of Patents and Trademarks determines the policies and directs the programs of the PTO and is responsible for all activities of the PTO. They receive, and must respond to, a wide range of official correspondence. Similarly, other executive and administrative staff at the PTO must track administrative correspondence. The Executive Document Management System (EDMS) provides this needed document tracking capability.

The E-FOIA System facilitates answering Freedom of Information Act requests.

The Office of the Solicitor provides legal advice to the Commissioner and all other PTO organizations. The Solicitor represents PTO in all litigation before the Federal Circuit and the District Court, defends PTO employees in legal depositions usually involving patent infringement between private parties, and handles prosecution of patent attorneys or agents before an Administrative Law Judge for violations of disciplinary or ethical rules. The Solicitor's Office also processes Freedom of Information Act requests. Solicitor Office attorneys rely on PTO's office automation and electronic mail services, desktop access to patent and trademark search and application tracking



data bases, and access to commercial data bases such as Lexis/Nexis. To facilitate answering Freedom of Information Act requests, the Office uses the E-FOIA System.

The Office of Enrollment and Discipline (OED) provides agent or attorney applicants the means to become eligible to practice patent law before the PTO through enrollment in the examination process. This includes developing and administering an examination for registration to practice before the PTO in patent cases. All appli-

The Office of Enrollment and Discipline administers and manages examinations for 6,000 attorney or agent applicants each year.

cants who pass the enrollment and examination process are recorded on the official register of eligible attorneys or agents who may practice before the PTO. OED also investigates possible violations of the PTO Code of Professional Responsibility and takes appropriate action where violations of the Code are found. The Office relies on PTO's office automation and electronic mail services and desktop access to PALM to perform its work.

The Administrator for Legislative and International Affairs is the principal advisor to the Commissioner and the Deputy Commissioner on policy matters related to intellectual property protection including proposed legislation and international activities of the U.S. This Office formulates legislative and policy proposals, prepares supporting documentation to carry out the legislative programs and policies of the Patent and Trademark Office, and reviews and prepares analyses of other legislative proposals concerning intellectual property matters. The Office promotes international development of intellectual property systems and advocates improvements and more cost-effective means of protecting intellectual property rights of U.S. nationals throughout the world. This Office relies on PTO's office automation and electronic mail services, desktop access to patent and trademark search data bases, and access to commercial data bases such as Lexis/Nexis to perform its work.

Corporate Support Function – Resource Management

The resource management portion of the Corporate Support function enables the PTO to carry out its mission by providing human resource management, financial management, procurement, and administrative services.

The PTO relies on the Department of Agriculture's National Finance Center to provide personnel and pay services, and the Department of Interior's Federal Financial System to support finance and procurement functions. PTO employees access these systems through a PTOnet gateway.

The PTO is authorized by legislation and administrative rules to charge fees to recover all costs of operating the PTO. There are approximately 170 different statutory fees



charged for the products and services offered by the Office. The Office of Finance is supported by the Revenue Accounting Management (RAM) system to process fees. RAM is essentially the PTO's accounts receivable system and processes nearly 1.13 million transactions per month.

The Office of the Comptroller began deployment of Program Office Desktop (POD) to organizational units in FY 1998. The core components of this application include disbursing, travel accounting, planning and budget execution, budget formulation, and property management. These capabilities

will allow the PTO businesses to operate in a more efficient manner. Managers will have greater flexibility to respond to financial issues that require prompt attention.

RAM supports the processing of approximately 170 different statutory fees - nearly 1.3 million transactions per month.

Additionally, the PTO deployed the Job Application Rating System (JARS) to help with the hiring process. Through JARS job applicants can submit their applications for patent examiner positions over the Internet. In FY 1998, PTO successfully hired nearly 700 patent examiners who submitted their job application through JARS.

Corporate Support Function – Information Technology Infrastructure

The information technology infrastructure portion of the Corporate Support function encompasses all of the hardware, system and data base software, communications, and related support services (information technology acquisition, system engineering, data management, and software product assurance) that support all PTO business automated information systems.

A distinctive characteristic of the PTO's information technology environment is the management of large and continually growing text and image data bases, coupled with a requirement to process very large volumes of transactions to support Patent and Trademark application processing. As shown in Figure 1 on the next page, the Patent Business area expects to receive approximately 240,000 original invention filings³ by FY 2004 — an annual growth rate of 5 percent.

A distinctive characteristic of the PTO's information technology environment is the management of large and continually growing text and image data bases...

³ As detailed within the FY2000 Corporate Plan, the PTO is currently transitioning to tracking original invention filings for a more reliable and consistent measure of workload over time.



Patent Original Inventions Filed

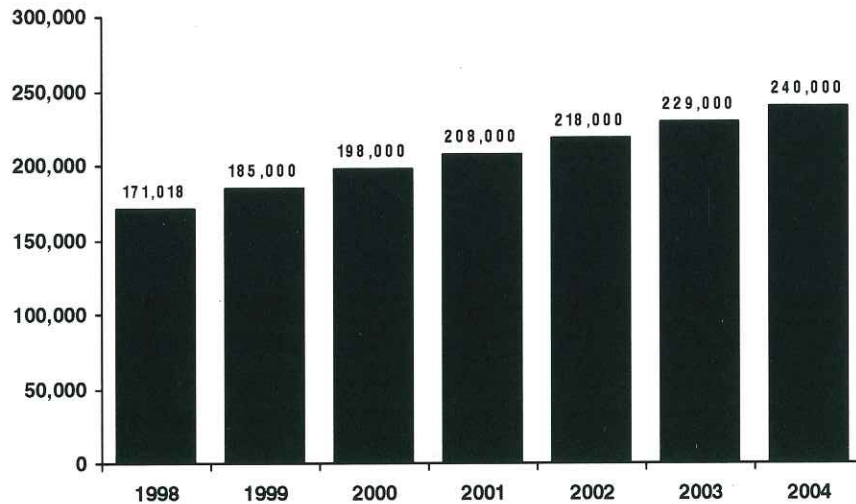


Figure 1

As shown in Figure 2, trademark application filings also are expected to continue to grow, reaching approximately 413,000 filings by FY 2004. This represents a minimum annual growth rate of 10 percent. However, PTO has experienced a 13 percent annual growth rate since 1991.

Trademark Applications Received

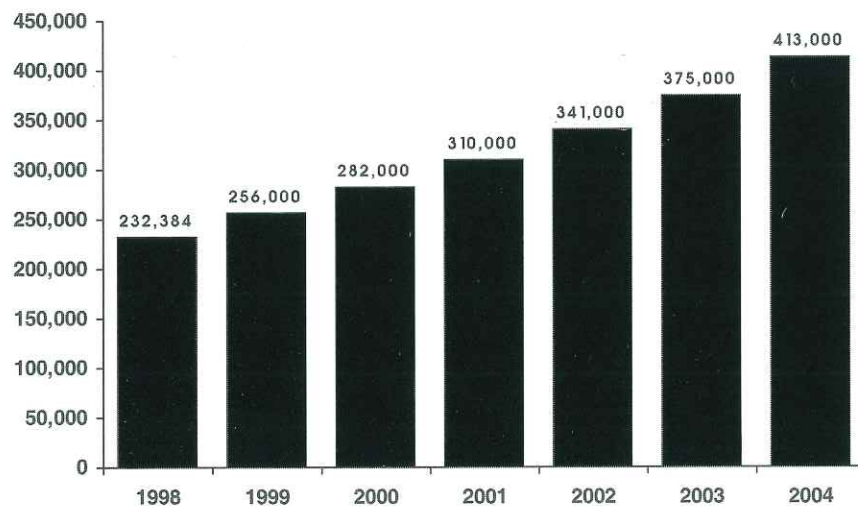


Figure 2



Support for the PTO's varied workloads requires a significant investment in information technology resources. These information technology resources include a cadre of highly skilled personnel and support contractors, a centrally located processing facility, and state-of-the-practice capabilities linked together through a PTO-wide communications network (PTOnet). PTOnet provides office automation services, and access to the PTO's business applications and data bases, to more than 7,000 customers located throughout the 18 building campus in Arlington, Virginia.

The PTO also has evolved the information technology infrastructure hardware and software to better support the business processes. The PTO's network supports day-to-day office automation as well as bandwidth-intensive image searching. In FY 1998, the PTO completed the deployment of 35 terabytes of magnetic storage to replace the aging optical storage devices used to store text and image information to support examiner and attorney requirements for expanding content of the databases.

The PTO also has evolved the infrastructure so that more information technology resources are available during extended work hours. PTO business systems and Help Desk support are available from 6:30 am to 9:00 pm Monday through Friday and from 7:30 am to 5:30 pm on weekends and holidays. Electronic mail services are available 24 hours a day. In FY 1998, the PTO enhanced the firewall to provide secure Internet access through PTOnet, completed the installation of high speed switching devices employing Asynchronous Transmission Mode (ATM) technology, and completed the integration of all PTOnet sub-networks. The PTO also completed the migration to Windows NT as the desktop workstation operating system. Windows NT on the desktop allows PTO to provide employees with access through PTOnet to all PTO business and office automation software applications. These enhancements enable the PTO to keep up with changing business needs and increasing business workloads.



Figure 3 below provides a high-level architectural view of the PTO's current information technology environment.

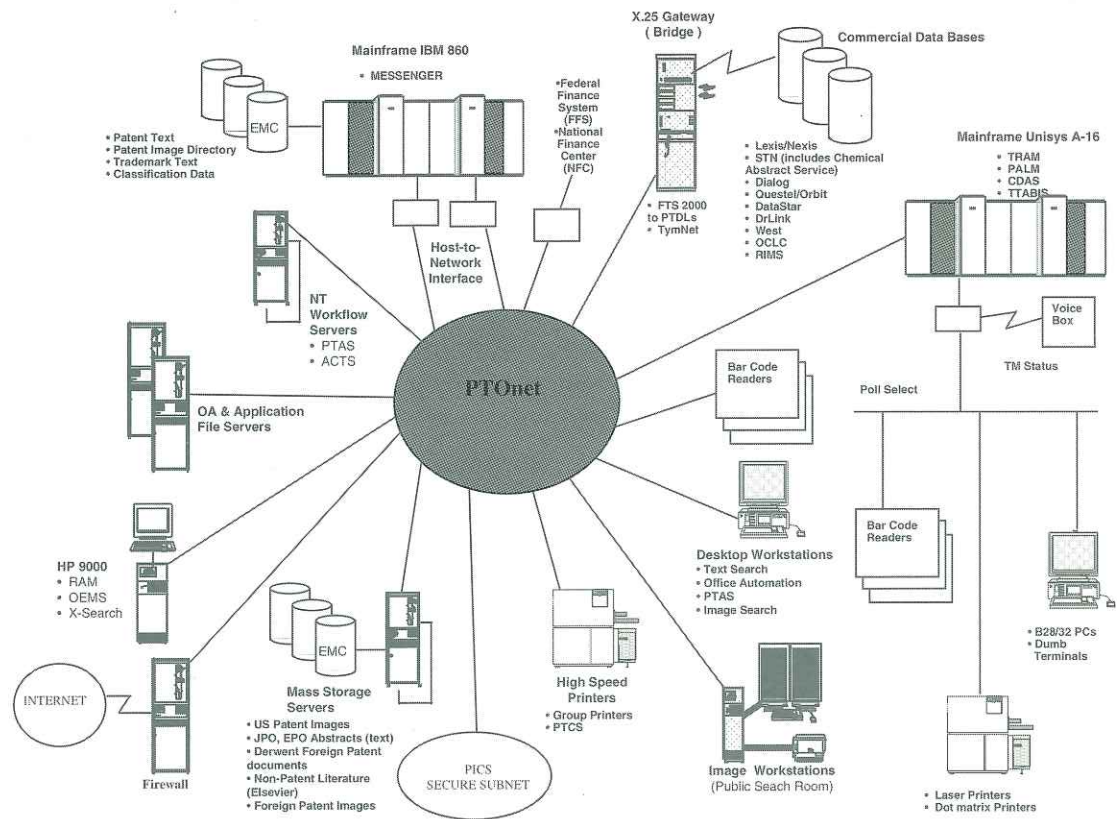


Figure 3
Current PTO Information Technology Architecture

PTO has also made significant progress toward resolving century date processing problems. The PTO's primary approach to assuring that its mission critical systems can accommodate the century change is through replacing them and major components of the information technology infrastructure. PTO has completed 66 percent of its Year 2000 compliance work for mission critical systems. As of November 1998, 23 of PTO's 35 mission critical systems are Year 2000 compliant.

Strategic Information Technology Initiatives

In order to achieve the PTO's vision of the future electronic workplace, take advantage of the Global Information Infrastructure to conduct electronic commerce, and establish a global network to link intellectual property offices for the purposes of data exchange and cooperation, the PTO must continue to modernize its automated infor-



mation systems and supporting information technology infrastructure.

The PTO has adopted a systematic and incremental approach to implement new automated information systems that will ultimately support reengineered patent and trademark processes, resolve century date processing problems, implement electronic commerce, and dramatically improve customer satisfaction and operating efficiency. The PTO's primary approach to assuring that its mission-critical automated information systems can accommodate the century date change is through replacing them and major components of the information

PTO has adopted a systematic and incremental approach to implement new systems that will ultimately support the reengineered patent and trademark processes, resolve century date processing problems, implement electronic commerce, and dramatically improve customer satisfaction and operating efficiency.

technology infrastructure. The PTO plans to have all century date processing problems resolved by June 1999. The PTO is replacing its legacy systems and proprietary mainframe information technology infrastructure components with redesigned systems and open system components. The redesigned systems and information technology infrastructure components (e.g., application and data base servers, data base management, operating system, and network management software) will provide the foundation for the PTO's future electronic workplace.

Current automated information systems are a major impediment to implementing reengineered patent and trademark business processes. The current systems are not constructed based on an architecture that allows easy adaptation to continuously changing business needs. Systems such as the Patent Application Location and Monitoring (PALM), Trademark Reporting and Monitoring (TRAM), and the patent search system require duplicative communications networks and hardware which are expensive to maintain and operate, and are becoming increasingly resistant to change. Figure 4 on the next page provides a high-level architectural view of the future PTO information technology environment.



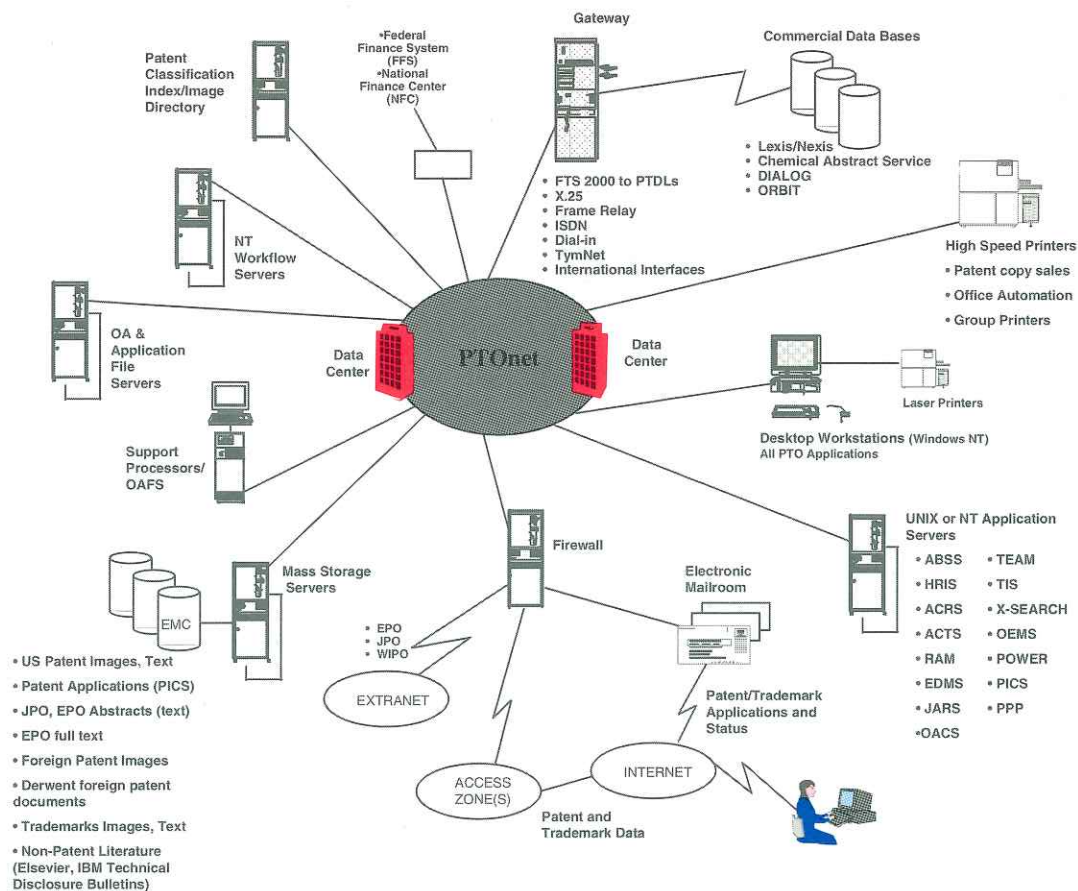


Figure 4
Future PTO Information Technology Architecture

As the PTO moves to an open system environment, its information technology service enhancement plans will reflect the—

- Patent Business Area
- Trademark Business Area
- Information Dissemination Business Area
- Policy Function
- Corporate Support Function
- ◆ Resource Management
- ◆ Information Technology Infrastructure



The following sections provide a high-level summary of the initiatives for each of these areas.

Patent Business Area

One of the principal drivers of change in the Patent Business is the steady growth of application filings experienced in the last decade. Based on the historical growth rate and other economic indicators, the Patent Business is expected to continue to grow well into the next century. Other drivers of change include changes to patent law and regulations, the increasing complexity of patent applications in the biotechnology and computer-related arts, and pressures to improve the quality of patent products and services. Patent law now provides that the term of patent protection begin on the date of grant and end 20 years from the filing date of the application. This change in the term of a patent places greater responsibility on the Patent Business to minimize any delays in the processing of the application for granting a patent, as this would prevent the applicant from enjoying a longer patent term than the previous 17-year term from date of issue.

The Patent Business is experiencing an ever increasing pressure to provide improved quality and customer service in all those products and services for which it is responsible. The products and services of the Patent Business must meet the requirements and challenges of an increasingly technological world and ever changing global economy. The PTO's historical response to increasing workloads has been to hire more personnel to ensure timeliness, quality, and efficiency. But this approach is no longer sufficient in itself. The Patent Business is reengineering its business processes and leveraging information technology to help respond to the drivers of change and address the challenges facing a growing Patent business.

The reengineered Patent Business envisions an environment where customers provide information and receive products or services in a form most desired by them. Leveraging information technologies in support of this goal will allow the Patent Business to reduce overall cycle time to 12 months for all inventions, reduce processing time for a myriad of

...reduce overall cycle time to 12 months or less, reduce processing time for a myriad of support services, and streamline work flow to meet an ever increasing workload.

support services, and streamline work flow to meet an ever increasing workload. Benefits of electronic filing to the customer include reduced cycle time as a result of improved application processing timeliness and quality. Electronic filing will reduce the burden on the Patent Business in converting the content of the applications to electronic form, reduce errors inherent in re-keying of data, and reduce the number of personnel required for the handling of paper applications. In combination with



existing systems, electronic filing will provide the input for essentially paperless application processing and expedite the patent publication process. With a standard filing format for applications, costs for printing and capturing of data should be reduced. By implementing re-engineered processes along with improved automation support, many Patent Business processes can be accomplished in parallel, thereby reducing overall cycle time.

The Patent Business has adopted a systematic and incremental approach to implement new automated information systems that will ultimately support reengineered patent processes, resolve century date processing problems, implement electronic commerce, and dramatically improve customer satisfaction and operating efficiency. The Patent Business plans to replace PALM, expand the content of the patent image and text data bases, replace the primary text search engine with a modern Commercial-Off-the-Shelf product, add functionality to the Application Capture and Review System (ACRS) to perform initial classification of patent applications, extend the Patent Image Capture System (PICS) to the Technology Centers to capture applicant correspondence, automate Patent Cooperation Treaty (PCT) operations, electronically photocompose patent information products, implement electronic filing and electronic examination, and deploy a network to support data exchange and cooperation with the PTO's Trilateral partners and the International Bureau, and ultimately other WIPO member countries.

The Patent Business is critically dependent on PALM to support day-to-day operations. PALM performs workflow tracking and status reporting for patent application processing. PALM is dependent on institutional knowledge to keep operating properly. PALM is costly and difficult to maintain and cannot take advantage of advances in technology available in an open system environment. Replacement of PALM using an open system architecture will facilitate future modifications and enhancements with fewer resources. The Patent Business plans to continue to incrementally deploy the redesigned PALM in FY 1999 and be fully operational in FY 2000.

Through the Patent Application Information Retrieval (PAIR) system, the Patent Business plans to allow PTO customers to obtain status of their application through the Internet in FY 1999. PAIR will provide patent applicants and/or their designated representatives restricted Internet access to patent application status without compromising the confidentiality of applicant's data. To accomplish this, the PTO plans to use Public Key Infrastructure technology.

The Patent Business will continue to enhance examiner search capabilities by improving the content of and access to prior art data bases. The future Patent search system will have a seamless approach to automated search support.

The Patent Business will continue to enhance examiner search capabilities by improving access to patent data bases.



Single command lines will allow patent examiners to access a broader range of in-house databases of U.S. and foreign patents and non-patent literature and commercial databases, library and reference systems on the Internet or otherwise accessible technical literature. Patent examiners desire automated text search capabilities that treat all patent data, U.S. and foreign, and non-patent literature data as a single comprehensive search resource. The Patent Business plans to replace its proprietary text search system and with a modern text search product during FY 1999. Future text search products will be able to search the text, sections of text (e.g., claims) and ultimately, graphics and other complex work units attached to a patent, such as chemical structures, and be fully integrated into the Patent Business' electronic operations using both Boolean and advanced linguistic tool techniques.

The Patent Business will continue to expand its in-house patent text and image data bases and continue to add non-patent literature. The Patent Business plans to capture text information of U.S. patents issued prior to January 1971 using optical character recognition technology. The Patent Business plans to add

The Patent Business plans to expand the content of text and image databases to incorporate U.S. and foreign patent data as well as non-patent literature.

the captured text of all U.S. patents back to 1960 and selected arts to 1920 to the search data base during FY 1999, and to complete the capture of the text of all U.S. patents during FY 2000. The Patent Business also plans to make available to examiners the full text of non-U.S. patent documents obtained from the European Patent Office through the Trilateral data exchange program. Working with our Trilateral partners, the PTO plans to incrementally load foreign patents from other PCT member countries beginning in FY 1999 and continuing through FY 2004. The PTO plans to add the IBM Technical Disclosure Bulletins to its collection of electronic non-patent literature in FY 1999.

The Patent Business has deployed a special purpose search system to support Biotechnology examiners — the Automated Biotechnology Search System (ABSS). The ABSS accepts and electronically stores nucleic and amino acid sequence data submitted by applicants and supports searching of gene sequences claimed in applications using data stored from applicant submissions and commercial data bases of published gene sequence information. The comparison of one nucleic acid or amino acid sequence of several hundred base pairs against thousands of similar characters would be impossible without the use of ABSS. The sequence search data base is doubling in size annually and the number of sequences submitted by applicants is growing by 50 percent each year. To accommodate this workload growth and make it easier for applicants to file biotechnology applications, the Patent Business plans to replace the ABSS and create a new version of Patent-In that will allow applicants to file gene sequence data over the Internet in FY 1999. Based on current biotechnol-



ogy industry patent application trends and research activities, future activities will address examiners need for more advanced searching methods, improvements to further automate the search and filter the information, improvements in the system security, and enhancements the sequence submission software program.

As more and more patent data is made available to examiners, both classifiers and examiners need better access to modern patent classification tools and patent classification information in electronic form. The Patent Business plans to deploy desktop classification tools to support concept development, document classification and to view and manipulate class/subclass definitions and schedules during FY 1999. During FY 2000 the Patent Business also will initiate the reengineering of the patent classification procedures. Features and functions envisioned include integration with International Patent Classification (IPC) and European patent classification (ECLA) systems, integration with patent search systems, automated foreign language translation support, early identification of emerging technologies, ability to add drawings to patent classification definitions, and integration of classification tools with the Examiner's toolkit.

In FY 1999, the Patent Business plans to expand the functionality of Patent Image Capture System (PICS) to support reexamination and public access to reexamination cases. The application text will be used to perform automated pre-examination search and presumptive classification for initial routing to the appropriate Patent Technology Center. In FY 2000, formalities review capability will be added. The

Patent Business recognizes that applicants will continue to submit paper applications for the foreseeable future, and therefore must have the means to scan all incoming applications convert them to character coded text and electronic images. In FY 2001, the Patent Business will deploy PICS to the Patent Examining Corps for capture of follow-on applicant papers and office actions.

To support pre-search and initial classification business activities, as well as minimize manual data entry, the Patent Business plans to capture the text of incoming applications.

The Patent Business plans to build on the technology foundation of PICS and ACRS to accomplish photocomposition of allowed applications, publication of allowed applications, publication of patents, and production of information dissemination products based on published patents. The Patent Business plans to conduct research on commercially available publication software packages in FY1999, develop a prototype in FY 2000, and incrementally deploy the Photocomposition, Publishing and Production (PPP) system through FY 2003. Once fully operational, PPP will significantly reduce the Patent Business' \$20 million annual publishing cost.



The implementation of electronic filing and electronic examination is critical to the efficiency, effectiveness, and operational cost reductions associated with processing patent applications. The Patent Business plans to implement electronic filing and electronic examination in stages. The replacement PALM system, PICS, ACRS, and PPP will provide the foundation for a comprehensive electronic examination capability throughout the prosecution of a patent application. Upon receipt of electronic input from ACRS, the Electronic Mailroom, and automated PCT operations (POWER), the Tools for Electronic Application Management (TEAM) system will create the electronic file wrapper. As presently envisioned, the TEAM system will be capable of processing an application file from the point where it enters the Examining Group to the publication of the application file in electronic format.

The Patent Business plans to implement electronic filing and electronic examination in stages.

In order to define and refine requirements, validate assumptions, and mitigate risk, the Patent Business began a series of patent reengineering prototypes in FY 1996. These prototypes addressed both the human and technical engineering aspects of the future electronic workplace to include electronic filing and elec-

The Patent Business plans to begin accepting electronic applications in FY 2002 and complete deployment of electronic examination in FY 2003.

tronic examination with selected volunteer applicants. The Patent Business plans to build on these prototypes and other electronic workplace initiatives and initiate the incremental development of electronic patent application processing in FY 2000. This incremental approach ultimately implements the functionality envisioned in the Patent Business' future electronic workplace. The Patent Business plans to deploy electronic examination to one industry sector in FY 2002 and complete deployment in FY 2003. The Patent Business envisions conducting a pilot electronic filing of patent applications in FY 2000 and begin accepting electronic applications in FY 2002.

The Patent Business will begin electronic processing of PCT international applications in FY 1999. Implementation of electronic processing of national stage applications and electronic filing of PCT applications will occur in FY 2000. The Patent Business assists U.S. applicants, acts as a receiving office for international applications, serves as an International Searching and Preliminary Examining Authority, and processes international applications that are entering U.S. national stage. The Patent Business will use imaging technology, paper documents rendered into electronic images and electronic filing, as the first steps to minimizing the volume of paper. Using workflow and document management software, nearly all of the processing of the PCT application can be accomplished without the movement of paper through the processing



pipeline. Electronic case files will provide information in a media that facilitates exchange with different areas of the Patent Examining Corps as well as with the World Intellectual Property Organization (WIPO), PTO's Trilateral partners, and PCT member countries. Experience implementing electronic filing and electronic workflow processing of PCT applications will help the Patent Business implement the electronic workplace for the much larger U.S. application business.

The PTO is working with its Trilateral partners to establish a network and will have the network in place early in FY 1999 and will extend the Trilateral Network to WIPO early in FY 2000. The PTO and its Trilateral partners are also working closely with WIPO to create a Global Information Network (GIN). The Trilateral network will be integrated with the GIN once the GIN is operational. Both networks will be based on open system standards that will allow secure on-line exchange of intellectual property data among the offices. The PTO exchanges a variety of intellectual property data (e.g. patents, priority documents, PCT applications, PCT international search and examination reports, and procedural correspondence) with the European Patent Office, Japanese Patent Office, WIPO, and other foreign intellectual property offices. These exchanges fulfill U.S. obligations under the PCT and Paris convention and under bilateral document exchange agreements with foreign offices. The PTO's participation in the PCT and Paris Convention represents an important source of revenue, provides access to essential intellectual property documents and records from foreign intellectual property offices, and benefits U.S. applicants.

The electronic exchange of this data will replace the paper exchange of tens of thousands of documents with the potential for substantial savings in document shipping, handling, storage, and retrieval through the Trilateral Network and ultimately the GIN.

Trademark Business Area

The principal driver of change in the Trademark Business is the steady growth of application filings experienced in recent years. The Trademark Business is expected to continue to grow well into the next century. Applications have grown over 13 percent a year for the

last 4 fiscal years. This trend is expected to continue at 10 percent or more per year through FY 2003. Another driver of change is the implementation of the Trademark Law Treaty. The treaty requires member countries to accept multi-class applications and service mark applications. This would change the timing, but not the substance, of filings needed to maintain a trademark registration at the PTO, broaden the type of documents which may be recorded as assignment documents, and make adjustments to procedures.

By FY 2004, the Trademark Business expects to receive 425,000 trademark applications each year.



To help manage the demands of the increasing workload, the Trademark Business must find new ways to address customer needs and meet its business goals. Commercial businesses need a timely response to their applications for federal registration so they can make plans based on the Office's first action. The rapid examination and issuance of federally registered trademarks will assist businesses in the commercialization of new products and services. The Trademark Business' present operating environment will require significant changes to direct the changes necessary to achieve goals and improve the quality of trademark products and services. The products and services of the Trademark Business must meet the requirements and challenges of an increasingly technological world and ever changing global economy. The Trademark Business will leverage information technology to help respond to the drivers of change and address the challenges facing the growing business.

The reengineered Trademark Business envisions an environment where customers provide information and receive products or services in a form most convenient to them. Leveraging information technologies in support of this goal will allow the Trademark Business to reduce trademark application processing time. Key cycle time goals include: reduce the time to mail filing notices to 14 days; examine new applications and provide written communication regarding registrability within 3 months of the filing date; determine registrability of trademarks within 13 months of receipt of the application; issue Notices of Abandonment within 45 days of the date the file is abandoned; and mail Certificates of Registration within 7 days of registration.

The Trademark Business is placing the highest priority on making incremental improvements to the current Trademark Reporting and Monitoring (TRAM) system to support the reengineered trademark business processes, redesigning TRAM to operate in an open system environment, deploying an electronic filing capability, capturing incoming applications in elec-

Without a continued investment in information technology to support increased filings, Trademark examination and production operations will be interrupted.

tronic form, providing application status to customers over the Internet, and ultimately developing and deploying the Trademark Information System (TIS). Initiatives to support the Trademark Law Treaty will be identified during FY 1999. Necessary changes will be made to Trademark automated information systems and processes to comply with the provisions of the Trademark Law Treaty. Information technology support services will also be impacted by the growth of positions as additional services and support will be required.

The Trademark Business began a pilot in FY 1998 to scan incoming applications to create an electronic image and, using commercially available optical character recognition (OCR) technology, to capture the text of the application for processing by technical support staff. Plans are to put the Trademark Image Capture and Retrieval



System (TICRS) into full production in FY 1999. The Trademarks Business also plans to add functionality to TRADEUPS - the initial application data entry system. In FY 1999, TRADEUPS will be enhanced to accept data from electronically filed applications, scanned applications, or key entered data. The Trademark Legal Instrument Examiner will be provided the data in digital form and be able to enter, change, tag, re-tag, and verify the contents of the file.

TRAM contains bibliographic and prosecution history information for more than two million applications and registrations, performs workflow tracking, photocomposes the Trademark Official Gazette and produces management reports. TRAM is an integral component of workflow pro-

The redesigned TRAM will be incrementally deployed in FY 1999 and fully operational in FY 2000.

cedures relating to the prosecution of applications and the maintenance of registrations. In order to improve customer service, the current TRAM system must be replaced as quickly as operationally feasible by a system that uses "open system" components and has an architecture that facilitates modification, thereby requiring less resources to maintain and enhance. TRAM is also dependent on institutional knowledge to keep operating properly. TRAM cannot take advantage of advances in technology available in an open system environment. The migration from the legacy TRAM system to a system based on modern open system architectures will be achieved to the maximum extent practical within the context of the future trademark business processes and the provisions of the Trademark Law Treaty. The Trademark Business plans to incrementally deploy the redesigned TRAM in FY 1999 and be fully operational in FY 2000. The Trademark Business plans to initiate development of the Trademark Information System in FY 2000 and incrementally deploy capability through FY 2003. TIS will eventually accept electronically filed trademark applications, maintain an electronic file for application and registration, perform workflow electronically, record prosecution history and production information, improve search capabilities, photocompose the Trademark Official Gazette and Registration Certificates, and disseminate trademark information. The redeveloped TRAM system will serve as a foundation from which to develop TIS.

The implementation of electronic filing is critical to the efficiency, effectiveness, and operational cost reductions associated with processing trademark applications. Benefits of electronic filing to the customer include reduced cycle time as a result of improved application processing. Electronic filing will reduce the burden on the Trademark Business in converting the content of the applications to electronic form, reduce errors inherent in re-keying of data, and reduce personnel required for the handling of paper applications. In combination with existing systems, electronic filing will provide the input for essentially paperless application processing and expedite the Trademark printing process. With a standard filing format for applications, costs for



printing and capturing of data will be reduced. In order to mitigate risk, refine requirements, and validate assumptions, the Trademark Business conducted pilot tests with applicants for trademark filings in FY 1998. The Trademark Business will offer electronic filing capabilities through the Internet to all its customers in FY 1999 to include payment of application fees via a credit card. Through the Trademark Electronic Application Submission (TEAS) system communications between the applicant and Trademark attorneys will be streamlined. The initial focus is on applicant submission of data to the Trademark Business. Future enhancements include electronic communication with the applicant for office actions created during the prosecution of a case and post-registration actions. Through the Trademark Application and Registration Retrieval (TARR) system, the Trademark Business will allow PTO customers to obtain status of their trademark application through the Internet in FY 1999.

The Trademark Business plans to begin accepting electronic applications in FY 1999 and complete deployment of electronic examination in FY 2003.

The Trademark Business initiated the Trademark Work at Home pilot in March 1997. The pilot, with 18 Trademark attorneys participating, explores the concept of examining attorneys working from home. The 2 year pilot will be evaluated in FY 1999. If the pilot proves to be cost-effective and meets or improves customer service, up to 25 percent of Trademark attorneys could be working from home 60 percent of the time beginning in FY 1999.

Information Dissemination Business Area

Timely access to information contained in issued patents and registered trademarks is critical to the global economy. Realizing the importance of this information, the Information Dissemination Business strives to deliver intellectual property information when, where, and in the format needed by its customers, either as a public service or at prices which recover costs associated with the dissemination process.

The Information Dissemination Business will continue to produce and expand its current portfolio of products and services and will provide them through on-line ordering and delivery, fax, Internet, and telephone requests, through its network of Patent and Trademark Depository Libraries (PTDLs) located across the country, and through private companies that purchase bulk data from the PTO, add value, and resell the data to thousands of their own customers.

Driven by the opportunities and growth in electronic commerce, the Information Dissemination Business will expand Internet use for information dissemination, and implement Internet ordering and delivery processes. The PTO plans to expand the searchable database offerings on its Worldwide Web site by enhancing patent and



trademark data offerings. In FY1999, the PTO will continue to offer access to clipped images of all registered trademarks and pending trademark applications. In November 1998, the PTO will expand the searchable patent database to include the full text of all patents issued from 1976 to the present. During March 1999, the public will be able to access images of all patents issued from 1976 to the present.

By March 1999, the Information Dissemination Business will provide patent image information in addition to the patent text and trademark text already on the PTO's Worldwide Web site.

Further, in FY 1999, the Information Dissemination Business plans to provide customers with the ability to order and receive information products over the Internet, and provide PTDs the ability to access patent and trademark data bases over the Internet. In FY 2000, file wrapper imaging will be implemented in the Patent Public Search Room to help control access to the files. Also, automated workstation searching will be implemented in the Trademark Search Library to provide access to the PTO's trademark database.

The Information Dissemination Business also plans to significantly improve copy sales services by adding a Fax-on-Demand capability for patent and trademark copies, adding an interactive ordering system using the Internet, and providing patent, trademark, and assignment certification services by interfacing to other PTO systems which contain images of the patent applications and assignment documents. New printers will be purchased in FY2001 to disseminate these and additional print products from OEMS. The Information Dissemination Business plans to improve the performance and workflow management of the Patent and Trademark Assignment System (PTAS) and provide for electronic submission of assignment documents.

In FY 1999, the Information Dissemination Business will implement a system which automatically provides customer service representatives of the PTO Call Center with initial customer information. This will allow the business to better serve a customer base expected to be over 1,100,000 annually. In FY 2001, the Information Dissemination Business will begin creating a Central Publishing Repository containing the authority files from which all business information products and catalogs are produced.

The Information Dissemination Business also plans to begin upgrading selected product offerings from CD-ROM to DVD-ROM in FY 1999. The use of DVD-ROM will lower production costs, improve ease of use of PTO information products, offer a potential increase of 21 times of current capacity, and allow the Information Dissemination Business to produce a complete patent image backfile on DVD-ROM. In FY1999, IDO will identify historical publications which need to be captured for access



and preservation. When these publications are in electronic form, IDO will disseminate them to PTDLs and the public.

Policy Function

Currently, PTO executive and administrative staff use the Executive Document Management System (EDMS) to track administrative correspondence. This system will be converted to operate on the Windows NT 4.0 server and made year 2000 compliant early in FY 1999.

In 1996 Congress amended the Freedom of Information Act (FOIA) statute to require agencies to create an electronic reading room for records that have, or are likely to become FOIA requests. In FY 1998, the PTO established an electronic reading room on its Web site. The E-FOIA System will be expanded in FY 1999 to allow on-line redaction of FOIA-processed records and the transfer of those records to the electronic reading room.

The Office of Enrollment and Discipline receives and is required to respond to a wide range of official correspondence to administer examinations for 6000 patent attorneys or agents each year. The Office plans to use workflow, document management, and electronic forms software to automate the receiving and processing of patent attorney and agent applications in FY 1999. Electronic processing of applicant enrollment information and case files will provide information in a media that facilitates exchange of information with patent attorneys and agents and the PTO.

Corporate Support Function – Resource Management

The Corporate Support function enables the PTO's three business areas and the Policy area to perform their missions. The PTO's foundation strategies for providing customers with the highest level of quality and services are to: effectively manage resources, enhance human resources, employ better processes, and leverage information technology. In order to improve resource and human resource management, the Office of the Comptroller and the Office of Human Resources will also employ better processes and leverage information technology.

The Office of Human Resources assists the business areas in accomplishing their missions by providing recruiting, compensation and recognition, planning and consulting, employee and labor relations and training services. Many of the most significant business issues that the PTO faces today are human resource management issues. Whether meeting customer

Future human resource systems support the PTO's transition to a re-engineered and electronic workplace.



service goals or meeting the rapidly increasing demand to promote industrial and technological progress in areas such as biotechnology or computer software, all PTO managers have a growing need for meaningful and accurate information about their employees. Currently, the PTO relies on several automated systems that, due to limited functionality and antiquated technology, fail to provide the PTO Office of Human Resources with the information necessary to address these needs. In FY 1998 the PTO selected a COTS software product - Peoplesoft - to help manage human resources. The PTO plans to incrementally deploy the Human Resources Information System (HRIS) beginning in FY 1999. The PTO must continue to recruit and hire a large number of Patent examiners and Trademark attorneys to meet the significant workload increases and a high turnover rate. Because of the need to place emphasis on recruiting new examiners, PTO plans to deploy the recruiting and staffing module first followed closely by time and attendance. The remaining modules - employee benefits, payroll, compensation, employee relations, and labor relations - and an interface to the Job Application and Rating (JARS) will be incrementally deployed through FY 2002.

The Office of the Comptroller plans to upgrade financial systems to support the new PTO business environment. These systems collect and disseminate financial data for such purposes as cost accounting, re-

Financial management systems are undergoing major changes.

source allocation, and executive decision making. Sound planning and effective use of the PTO's resources are dependent on the availability of accurate financial data. The PTO does not collect and analyze, on an agency-wide basis, the costs associated with each process and service provided to internal and external customers. To address this problem, the PTO began incremental deployment of a cost accounting system in FY 1998 that will continue through FY 2001. The cost accounting system will facilitate the matching of actual costs to revenue streams, identify and allocate direct and indirect costs, and provide support for performing cost analyses.

In FY 1999, the Office of the Comptroller plans to incorporate patent maintenance fees and subscription services within the Revenue Accounting and Management (RAM) System. Beginning in FY 1999, the PTO plans to add electronic funds transfer capability in RAM to facilitate electronic filing fee transaction processing and electronic funds transfer between the PTO and external financial institutions.

The Office of the Comptroller will continue enhancements to existing systems to maintain optimum operational capabilities. These efforts will focus on providing upgrades to Procurement Desktop in FY 1999, which supports the Federal acquisition process; Executive Information System (EIS), which provides corporate wide information to the PTO's decision makers, and Travel Manager which allows users to process documents in accordance with Federal Travel Regulations. A key component of the



Office's efforts to disseminate financial information to users is the data warehouse system which can aggregate and manipulate large amounts of data. The data can then be used for presentation, reporting, trend analysis and decision support.

Corporate Support Function – Information Technology Infrastructure

In order to achieve the PTO's vision of the future electronic workplace, take advantage of the Internet to conduct electronic commerce, the PTO must continue to modernize its information technology infrastructure. The heterogeneous nature of the PTO's current information technology environment has constrained the PTO's

The PTO is focusing its efforts on migrating its current information technology infrastructure to a standards-based open system environment.

ability to rapidly infuse new technology to meet the constantly growing demands of its workforce. The PTO is focusing its efforts on migrating its current information technology infrastructure to a standards-based open system environment. An open system environment will allow the PTO to add new products or infrastructure components or replace existing ones as new technologies are introduced into the marketplace. A managed information technology infrastructure will allow the PTO to: respond to changing business needs more quickly; leverage the infrastructure to serve all business areas; achieve economies through site software licenses and consolidated hardware maintenance contracts; reuse software components and designs; minimize information technology personnel training requirements; and improve customer service through product standardization. The PTO plans to have in place an information technology infrastructure built upon standards-based open system components in FY 2000.

The PTO continues to experience rapid exponential growth in both the use and expectations of its networked computer workstations and its PTOnet-provided office automation support services. A robust, reliable, scaleable, and secure information technology infrastructure is critical in the evolution towards the PTO's future electronic workplace in which most internal and external transactions are performed electronically. The PTO must incrementally upgrade or replace aging information technology infrastructure components to maintain production capability, support ever increasing workloads, and implement new business capabilities.

The PTO currently stores more than 27 terabytes of patent and trademark image data. The image data base is projected to continually grow through the addition of foreign patent documents, published U.S. patents, and patent and trademark applications and customer correspondence. The PTO completed the migration of the patent image data base from optical storage technology to magnetic storage technology and loaded the foreign patent full images onto the magnetic storage devices in FY



1998. The PTO will continue to augment its magnetic storage capability in FY 1999 to provide patent and trademark search services to the public through the Internet and to provide storage space for ever expanding data bases.

The large volume of image traffic places a huge workload and stringent performance requirements on PTOnet. The combination of easier access via desktop workstations and a three-fold increase in data base size required a redesign and upgrade of

...security will be a far greater concern... the risk of industrial espionage greatly increases.

PTOnet. This was particularly necessary to support the increased demand for images at the examiner's desktop workstation as well as the many new network-intensive software applications. In addition, security will be a far greater concern. As patent application information will be electronically available prior to public release, the risk of industrial espionage greatly increases. To address these expanding needs, as well as future public access requirements, several major enhancements are underway to make the current network more robust, reliable, scaleable, and secure.

PTOnet will soon become an open system, standards-based, high speed network providing data communications for the PTO campus and access from remote locations through secure gateways. The network facilitates universal transfer and exchange of electronic mail, word processing, spreadsheets, text, and image data; provides access to business applications; provides access to external commercial data bases and external networks and systems where policy permits and a business need exists; and provides access to the Internet. The high speed Asynchronous Transmission Mode network backbone supports image searching as well as electronic examination of the future. The PTO will replace the file server infrastructure again in FY 2001. The PTO plans to provide an enterprise log-on capability, secure PTOnet gateways, pilot Public Key Infrastructure, and pilot an electronic mailroom in FY 1999. The next major upgrade of PTOnet and implementation of a viable disaster recovery program will coincide with the move to the PTO's new facility beginning in FY 2001.

The PTO's primary approach to assuring that its mission-critical automated information systems, and major information technology infrastructure components, can accommodate the century date change is through replacement. The PTO is replacing its legacy systems and the proprietary

The PTO's primary century date change approach is replacement of critical systems and infrastructure components.

mainframe infrastructure components (e.g. storage devices, processors, operating system and data base management system software) on which these systems operate. The PTO plans to replace its Intel-based application servers on a 3-year rolling schedule, and its UNIX-based application servers on a 6-year rolling schedule, with



upgrades at the server's mid-life, beginning in FY 1999. The PTO also plans to replace group printers, scanners, and other peripheral devices on a rolling schedule beginning in FY 1999. The PTO also plans to begin a 3 year rolling replacement of desktop workstations in FY 2001.

The PTO has several information technology infrastructure activities aimed at improving the development and maintenance of the PTO's automated information systems. The activities include improving life cycle management processes; using an integrated suite of system development tools to ensure faster, more cost effective delivery of quality automated systems; performing independent testing; managing data so that it may be shared throughout the PTO; tracking the cost and schedule performance of information technology projects; managing information technology assets; and acquiring information technology products and services. The PTO plans to complete the standardization of all PTO data elements enterprise data model in FY 1999, complete enterprise configuration management in FY 2000, and conduct automated regression testing in FY 2001.

Implementation Schedule

The following summarizes key milestone dates for the FY 1999-2004 period. This summary links planned information technology activities or accomplishments with Corporate Plan business area activities.

KEY:

ADM	activities/commitments related administrative services
DATA	activities/commitments related to improving the collection, storage, and use of data and information across the organization.
DB	activities/commitments related to the expansion of the content of search data bases used by the Patent Business
DIS	activities/commitments related to disaster recovery and planning
EC	activities/commitments related to creating a fundamental infrastructure for electronic commerce and electronic workplace.
EW	activities/commitments related to the creation of a total electronic workplace in the patent business
FM	activities/commitments related to financial management
HR	activities/commitments related to human resources
H/W	activities/commitments related to upgrading and/or replacing infrastructure components, such as servers, desktop workstations, printers, scanners, and storage devices to maintain and expand production
ITPA	activities/commitments related to improving the delivery of information technology products — including requirements management, testing, and configuration management
NET	activities/commitments related to enhancing and improving PTOnet
DIS	activities/commitments related to disaster recovery and planning
OT	other activities/commitments such as new facility planning
PBA	activities/commitments related to the improvement of patent business administration
PCT	activities/commitments related to the electronic filing and processing of PCT applications
PEW	activities/commitments related to the creation of an integrated patent examiner workbench to improve access to data



High-Level Information Technology Schedule Patent Business Area

INVESTMENT STRATEGIES	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04
Maintain current patent business production Improve and enhance current patent business by leveraging information technology	PCT - Begin PCT Operations Workflow and Electronic Review for international applications (Phase 1) PCT - Establish extranet with Trilateral partners PCT - Provide electronic access to EPO PCT Search Reports and reference docs EW - Receive biotechnology gene sequences over the Internet EW - Begin incremental deployment of PALM replacement system EW - Provide public and reexamination staff with electronic access to reexamination applications EW - Deploy automated initial classification and L&R screening and route to Technology Centers EW - Conduct electronic filing prototype (EFS) EW - Conduct electronic examination prototype (TEAM)	PCT - Begin electronic receipt of PCT applications PCT - Complete PCT Operations Workflow and Electronic Review for international and national PCT applications (Phase 2) PCT - Extend Extranet to WIPO International Bureau (IB) EW - Pilot electronic filing for U.S. applications EW - Complete incremental deployment of PALM replacement system EW - Begin development of an integrated electronic examination system (TEAM) by building upon previous prototypes EW -Prototype electronic photocomposition and publication EW - Deploy automated formalities review and related pre-examination functions EW - Automated routing and tracking of patent interferences	EW - Pilot electronic filing for biotechnology patent applications over the Internet EW - Continue development of TEAM for electronic examination of patent applications EW - Deploy application document capture for all papers after initial filing EW - Pilot electronic photocomposition and publication	EW - Begin electronic filing of patent documents EW - Begin incremental deployment of electronic photocomposition and publication EW - Begin incremental deployment of TEAM to Technology Centers for electronic processing of patent applications	EW - Complete incremental deployment of TEAM to remaining Technology Centers for electronic processing of patent applications EW - Complete incremental deployment of electronic photocomposition and publication	EW - Prototype patent work-at-home



High-Level Information Technology Schedule Patent Business Area (continued)

INVESTMENT STRATEGIES	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04
Maintain current patent business production	EW - Provide applicants with status of patent applications over the internet	PEW - Deploy pre-search capability	PEW - Begin incremental deployment of interference search capability	PEW - Complete incremental deployment of interference search capability	PEW - Prototype complex work unit searching	PEW - Enhance CDS
Improve and enhance current patent business by leveraging information technology	EW - Test exchange priority documents electronically with Trilateral partners and WIPO	PEW - Pilot interference search capability	PEW - Provide examiners with value-added indexing (e.g., thesauri, synonyms)	PEW - Complete deployment of CDS integrated classification and search		PEW - Pilot complex work unit searching
	PEW - Deploy replacement Patent Text Search System	PEW - Complete deployment of desktop reclassification tools	PEW - Begin deployment of CDS integrated classification and search			
	PEW - Deploy integrated interface for image and text search of both US and foreign patents	DB - Provide classified search capability for EPO and JPO patent documents	Begin development of PALM services to support electronic filing			
	PEW - Pilot pre-search capability	DB - Complete OCR and converting U.S. patent backfile				
	PEW - Provide integrated electronic capture and storage of all office actions	Production for Receipt of BioTech Gene Sequences Over Internet				
	PEW - Replace bio-technology sequence searching system, including massively parallel processors					
	PEW - Begin deployment of desktop reclass tools					
	PEW - Tracking production of application dispute resolution					
	PEW - Improve examiner access to MPEP					
	PEW - Enable more timely updates to the MPEP by converting to SGML					



High-Level Information Technology Schedule Patent Business Area (continued)

INVESTMENT STRATEGIES	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04
Maintain current patent business production	DB - Begin incremental load of foreign (non-Trilateral) patent documents of PCT member countries		DB - Load Certificate of Correction data	DB - Deploy certificates of correction database		
Improve and enhance current patent business by leveraging information technology	DB - Prototype classified search capability for EPO and JPO patent documents					
	DB - Examiner access to U.S. patent backfile, with patents back to 1920					
	DB - Continue incremental load of non-patent literature - provide desktop access to IBM technical disclosure bulletins					
	Y2K - Ensure all business-critical systems are Year 2000 compliant					



High-Level Information Technology Schedule Trademark Business Area

INVESTMENT STRATEGIES	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04
Maintain current trademark business production Improve and enhance current trademark business by leveraging information technology	Accept trademark applications electronically over the Internet Applicants may correspond electronically with the Trademark Business via E-mail Integrate desktop data entry with electronically filed applications Deploy desktop text editing in the Law Offices Deploy scanning of incoming applications Pilot scanning of incoming correspondence Begin incremental deployment of TRAM replacement system Support TLT processing requirements for October 31, 1999 Perform presumptive classification Provide applicants with status of trademark applications over the internet Up to 25% of trademark examining attorneys will be allowed to work at home Ensure all business-critical systems are year 2000 compliant	TRAM replacement system fully operational Deploy scanning of incoming correspondence Photocompose TRAM images in Trademark Official Gazette Begin development of an integrated system (TIS) by building upon TRAM replacement system and the electronic filing system TTABIS internet submission capability An additional 10% of trademark examining attorneys will be allowed to work at home Accept other trademark forms signed by applicants electronically over the Internet	Continue TIS development Enhance pre-exam creation of design codes, pseudo marks, and drawing codes Prototype expert systems review of applications (TIS) An additional 10% of trademark examining attorneys will be allowed to work at home	Deploy TIS and begin electronic processing of trademark applications Pilot expert systems review of applications (TIS) An additional 10% of trademark examining attorneys will be allowed to work at home	Enhance image capture and retrieval with workflow capabilities Deploy expert systems review of applications (TIS) An additional 10% of trademark examining attorneys will be allowed to work at home	An additional 10% of trademark examining attorneys will be allowed to work at home



High-Level Information Technology Schedule Information Dissemination Business Area

INVESTMENT STRATEGIES	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04
Maintain current information dissemination business production Improve and enhance current information dissemination business by leveraging information technology	Upgrade hardware and software to DVD-ROM at PTDs Begin USAPat backfile on DVD-ROM Provide trademark image data on the internet Provide patent full-text and image data via the Web site Implement Internet access to patent and trademark databases at PTDs Implement Computer Telephony Integration for the Enterprise Call Center Begin file wrapper imaging to provide workstation electronic access to the public Begin pilot of workstation searching in the Trademark Search Library Enhance Patent & Trademark Assignment Systems for automated fax submission Implement Internet ordering and delivery of information products Ensure all IDO systems are Y2K compliant	Complete redesign of Cassis products based on DVD-ROM Continue to provide USAPat backfile on DVD-ROM Provide additional patent and trademark data via the Web site Implement File Wrapper Imaging to provide workstation electronic access to the public Provide workstation searching in the Trademark Search Library Provide Internet submission of patent & trademark assignments and other transactions Provide IDO access to Biotechnology sequence database by enhancing OEMS Provide IDO access to Trademark Application Images (TICRS) database by enhancing OEMS & TMSL public access system	Complete USAPat backfile on DVD-ROM Implement electronic Central Publishing Repository Provide Partnership Libraries with access to OEMS Provide IDO access to PCT application images by enhancing OEMS Provide public access to certified copies of patents, trademarks, and assignments via Internet (OEMS)	Enhance assignments workflow	Provide IDO access to electronic Trademark Application images (TIS) by enhancing OEMS & TMSL public access system	Provide IDO access to the electronic Patent File Wrapper images (TEAM) by enhancing OEMS & TMSL public



High-Level Information Technology Schedule Policy Function



High-Level Information Technology Schedule Resource Management Area

INVESTMENT STRATEGIES	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04
Maintain current corporate business production	FM - Incorporate patent maintenance fee capability and subscription services in RAM	FM - Upgrade financial management and acquisition systems to web-based technology	FM - Establish automated fee processing capability for electronic filing	FM - Enhance RAM operational capabilities	FM - Enhance RAM to ensure compliance, as necessary, with Congressional legislation and Department of Treasury and OMB Regulations	FM - Enhance RAM to ensure compliance, as necessary, with Congressional legislation and Department of Treasury and OMB Regulations
Improve and enhance current corporate business by leveraging information technology	FM - Incorporate electronic check refunds capability in RAM	FM - Upgrade Procurement Desktop	FM - Upgrade Internet Credit Card processing capability	FM - Enhance RAM business support capabilities		
	FM - RAM accepts credit card payments via Internet for Trademark Applications	FM - Enhance PCT fee processing	FM - Deploy enterprise-wide asset management	FM - Enhance RAM to ensure compliance, as necessary, with Congressional legislation and Department of Treasury and OMB Regulations	HR - HRIS strategic planning operational	HR - HRIS management information dissemination capabilities operational
	FM - Implement upgraded voice response system in RAM	FM - RAM accepts credit card payments via Internet for Trademark applications	HR - HRIS payroll interface between PTO and NFC			
	FM - Begin integration of fee processing with select PTO systems	FM - RAM provides for automated fee calculation for patent pre-examination		FM - Complete integrated fee processing with all other PTO systems		
	FM - RAM accepts credit card payments via Internet for Information Dissemination products	FM - Establish deferred revenue accounting capability in RAM		FM - Begin integration of Enterprise Asset Management System with other management information systems		
	FM - RAM processes automated transfer of maintenance fees	FM - Pilot automated asset inventory		HR - HRIS compensation, employee relations, and labor relations capabilities operational		
	FM - Enhance fee reconciliation for PTO activities	HR - HRIS time and attendance module operational		HR - Upgrade existing capabilities in previous HRIS modules		
	FM - Upgrade resource management and business efficiency - deploy Program Office Desktop to remainder of PTO	HR - HRIS employee benefits administration module operational		HR - Deploy EEO case management retrieval system enhancement		
	FM - Improve management of Fixed Assets (Fixed Asset module of Program Office Desktop)	ADM - PTO requests services centrally using automated PTO-1464 form				
	FM - Expand OFIS to store images of financial documents					
	FM - Improve Program Codes for recording cost and produce FY99 cost documentation - Cost Accounting system					
	FM - Upgrade financial management and acquisition systems - Procurement Desktop					
	FM - Automate the travel order process - expand Travel Manager system functionality					
	FM - Deploy change management capability					
	HR - HRIS recruitment and staffing operational					
	HR - Deploy EEO case management retrieval system					
	Ensure all corporate -critical systems are year 2000 compliant					
	Ensure all resource management-critical systems are Y2K compliant					



High-Level Information Technology Schedule Infrastructure

INVESTMENT STRATEGIES	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04
Maintain current information technology infrastructure production	H/W - Begin rolling replacement of select office automation servers (3 year cycle)	H/W - Implement enterprise-wide print service H/W - Begin rolling replacement of high speed scanners (3 year cycle)	H/W - Begin rolling replacement of select application servers (6 year cycle)	NET - Deploy 100 mb to desktop workstations NET - First computer center operational at new PTO facility	NET - Second computer center operational at new PTO facility (providing redundant network services)	H/W - Continue rolling replacement of select application servers
Migrate automated information systems to operate on evolving infrastructure (open system environment)	H/W - Begin upgrade and add application servers NET - Pilot upgrade of desktop line speed for selected applications	ITPA - Select EMS products ITPA - Deploy Consolidated Service Desk	H/W - Begin rolling replacement of desktop workstations H/W - Continue upgrade of magnetic storage (5 year cycle)	DATA - Deploy Data Quality Improvement Program to Information Dissemination	ITPA - Complete implementation of Enterprise Management system	
Improve and enhance information technology infrastructure	NET - Enterprise-wide logon available; secure PTOnet ITPA - Pilot enterprise requirements management	ITPA - Deploy enterprise requirements management ITPA - Incorporate routine automated regression testing	H/W - Begin rolling replacement of desktop printers (3 year cycle) H/W - Begin rolling replacement of low speed scanners (3 year cycle)	DATA - Deploy Corporate Support area to Data Warehouse EC - Deploy distributed video training	ITPA - Integrate Configuration Management with Enterprise Management System	
Enhance and improve tailored life cycle management process	ITPA - Pilot automated regression testing DATA - Standardize patent data elements DATA - Deploy enterprise access to information repository to business users DATA - Deploy Data Quality Improvement Program to Patents DATA - Prototype web-based Executive Information System DATA - Add Patent data to Executive Information System	ITPA - Institutionalize enterprise configuration management DATA - Deploy additional financial data to Data Warehouse DATA - Deploy Human Resources subject area to Data Warehouse DATA - Integrate OPBUDGET Information to Data Warehouse	DATA - Complete Enterprise Data Model DATA - Deploy Data Quality Improvement Program to Trademarks DATA - Deploy Information Dissemination subject area to Data Warehouse DATA - Deploy Trademarks subject area to Data Warehouse ITPA - Integrate Configuration Management with Enterprise Asset Management System		DATA - Deploy Data Quality Improvement Program to Infrastructure areas DIS - Archiving and disaster recovery capabilities fully operational	



High-Level Information Technology Schedule Infrastructure (continued)

INVESTMENT STRATEGIES	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04
Maintain current information technology infrastructure production	DATA - Deploy additional Patent data to Data Warehouse	EC - Pilot electronic filing of patents	EC - Implement electronic records management throughout the PTO			
Migrate automated information systems to operate on evolving infrastructure (<i>open system environment</i>)	EC - Establish pilot electronic mailroom	EC - Implement electronic records management in Trademark Business Operations				
Improve and enhance information technology infrastructure	EC - Identify electronic records management requirements for all PTO business operations	DIS - Replace and integrate select tape backup systems				
Enhance and improve tailored life cycle management process	DIS - Complete disaster recovery plan for records					
	DIS - Complete disaster recovery plan for IT infrastructure					
	DIS - Complete PTO Y2K business continuity and contingency plan					
	DIS - Complete contingency plans for each AIS critical system					
	DIS - Complete installation of alternative path cabling for PTOnet					
	Y2K - Ensure all infrastructure components are Y2K compliant					

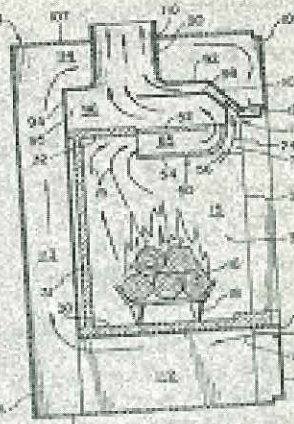


PTO Information Technology Financial Summary by Customer/Function

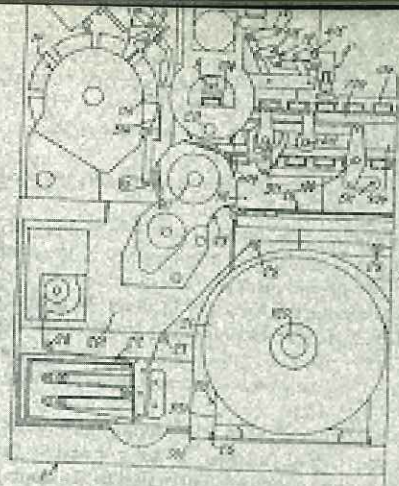
(in thousands of dollars)

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004
Patent Business	55,607.18	64,982.04	57,684.37	61,551.75	55,621.39	57,635.44
Development	21,233.44	27,998.84	20,015.65	23,074.05	12,331.53	12,646.40
Operations & Maint.	34,373.74	36,983.21	37,668.72	38,477.70	43,289.86	44,989.03
Trademark Business	12,500.40	18,061.52	15,764.09	15,797.95	14,182.26	15,694.94
Development	3,949.00	9,152.20	5,878.25	6,522.42	1,902.18	3,106.90
Operations & Maint.	8,551.40	8,909.33	9,885.84	9,275.53	12,280.09	12,588.04
Information Dissemination	15,781.83	17,379.62	19,816.64	20,796.52	23,887.48	22,907.51
Development	7,172.07	6,299.41	6,158.33	4,120.87	4,145.08	4,295.85
Operations & Maint.	8,609.76	11,080.21	13,658.31	16,675.65	19,742.40	18,611.66
Policy Function	922.00	1,018.10	1,099.30	1,152.73	1,231.29	1,300.19
Development	128.00	128.12	134.51	136.80	142.16	145.98
Operations & Maint.	794.00	889.98	964.79	1,015.92	1,089.12	1,154.20
Corporate Function	18,039.66	13,679.96	12,322.11	13,652.48	13,271.65	13,187.01
Development	9,246.16	4,055.28	3,026.06	4,060.30	2,978.52	2,391.04
Operations & Maint.	8,793.49	9,624.68	9,296.05	9,592.18	10,293.13	10,795.97
Enterprise Infrastructure	63,129.93	65,758.52	115,313.55	94,587.66	86,516.46	88,075.74
Development	6,754.24	4,596.99	6,392.65	5,220.37	5,062.61	4,988.77
Operations & Maint.	56,375.69	61,161.53	108,920.90	89,367.29	81,453.85	83,086.98
Total Development	48,482.92	52,230.83	41,605.45	43,134.81	26,562.08	27,574.94
Total Operations & Maint.	117,498.08	128,648.93	180,394.61	164,404.28	168,148.45	171,225.88
TOTAL BUDGET	165,981.00	180,879.77	222,000.06	207,539.10	194,710.53	198,800.82

Mark R. Champton, Birmingham, Ala.
 The Products Company, Huntington, Ind.
 Continuation of Ser. No. 202,785, Feb. 28, 1994, abandoned.
 This application Dec. 15, 1995, Ser. No. 573,571
 Int. Cl.⁶ F24B 1/188
 U.S. Cl. 126—523



13 Claim



...vering pressurized gas to the airway
 ...Ser. No. 366,745
 A62B 7/00

...w of said gas;
 ...the airway of t

A processing machine which performs various steps of pro-
 ce comprising:
 ...an upper support and lower housing beneath said

**5,701,818
 PRINTING PRESS CYLINDER COUPLER
 AND APPARATUS**

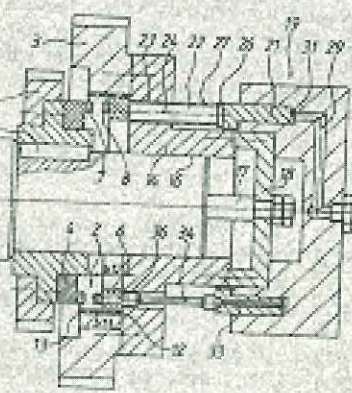
Mark Mohrmann, Hückberg, Germany, as
 & Bauer-Albert Aktiengesellschaft, Würzburg,

Filed Oct. 7, 1996, Ser. No. 726,684
 priority, application Germany, Oct. 7, 1995, 195 37

Int. Cl.⁶ B41F 13/10

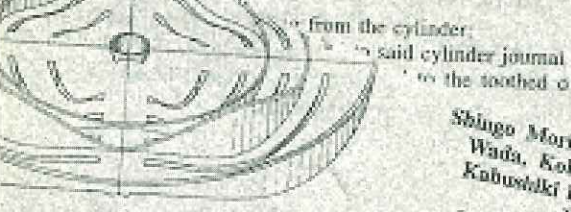
101—375

12 Claim



...dryer module
 ...E HAVING
 ...DIFFERENT
 ...na, 8-30 Nm
 ...of Korea
 ...part of Ser.
 ...s a division
 ...is applicati
 ...Int. Cl.
 ...33 R

...nting press cylinder coupling device for
 ...thed driving wheel comprising:



Shingo Morik
 Wada, Kobe,
 Kabushiki Kai
 Fuku
 Claims priority,
 U.S. Cl. 123—630

...form stationary fire grate having a
 ...settings thereon, contour of fire gr
 ...ential direction and in radial direct
 ...T
 ...fluor
 ...1995, Ser. No. 550,310
 ...Cl.⁶ G06F 19/00, B07C 5/342
 ...78,11

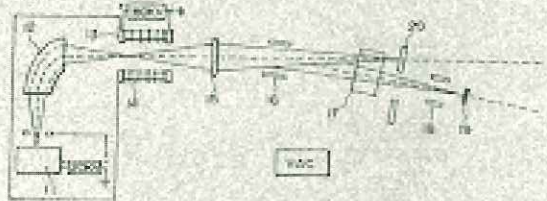
1. A method for printing item
 press, a print job being the trans
 press to a series of individual the
 rotary printing press comprising
 having an axis of rotation, said at lea
 movable in a direction substantially
 ...age a ...stroke, said method c
 ...for

Aug. 24, 1996, Ser. No. 573,571
 1992, 4-252057

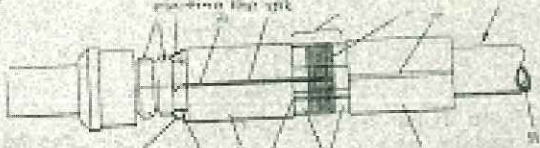
Int. Cl.⁶ B41J 2/14;2/16

U.S. Cl. 347—45

21 Claim



1. An ink jet head comprising:
 a base member having an ejection surface;
 an ejection outlet, formed in said ejection surface, for ejecti
 ink; and
 an ejection energy generating element for generating ener
 ...ejecting the ink



published by the
**Office of the
 Chief Information Officer
 United States Patent & Trademark Office**